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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,673	09/15/2003	Masaaki Matsushita	03500.01553.1	9141
5514	7590	11/08/2005	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			DIAMOND, ALAN D	
			ART UNIT	PAPER NUMBER
			1753	

DATE MAILED: 11/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/661,673

Applicant(s)

MATSUSHITA ET AL.

Examiner

Alan Diamond

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 September 2003 and 23 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 25-34 and 39-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-34 and 39-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/893,639.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>09152003</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Specification***

1. The disclosure is objected to because of the following informalities: On page 1, at the continuity data inserted before line 4, the term "now U.S. Patent 6,653,549" should be inserted after "June 29, 2001" so as to update the continuity data. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 26-29, 31-34, 39-42, and 43-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "predetermined", which appears at each of the following locations, is indefinite because it is subjective: in claim 26 at line 2; in claim 28 at each of lines 2 and 6; in claim 31 at each of lines 2 and 5; and in claim 33 at each of lines 2 and 5. It is suggested that "predetermined" be deleted from each of said locations. The same applies to dependent claims 27 and 32.

Claim 29 is indefinite because it is not clear what would be released by the "release operation" at line 2.

Claim 34 is indefinite because it is not clear what would be released by the "release operation" at line 2.

In claim 39, at line 11, the term "≈" should be changed to "=" so as to clearly point out what is intended. The same applies to dependent claims 40-42.

In claim 43, at line 12, the term "≈" should be changed to "=" so as to clearly point out what is intended. The same applies to dependent claims 44-46.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 25-34 and 39-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-85716 A (herein referred to as JP '716). Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

JP '716 teaches the instant methods of controlling a photovoltaic power generation system, as seen at JP '716's paragraphs 0012 and 0016-0037 and in Figures 1 and 5, the difference being that JP '716 does not specifically teach that its sensors, i.e., resistors (12) are located "around" the solar cell array (11). However, in the absence of anything unexpected, it would have been a matter of design choice so as to position the resistors (12) around the solar cell array (11). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have positioned the resistors (12) in practically any position relatively near the solar cell array

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(11), such as “around” the solar cell array (11), with the expectation that JP ‘716’s system would function properly.

6. Claims 25, 26, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 5-91681 (herein referred to as JP ‘681).

JP ‘681 teaches a method of controlling a photovoltaic power generation system comprising a solar cell array (11), sensors (12, 13), and a switch (14) for establishing a short circuit between output terminals of the solar cell array, wherein the short circuit between the output terminals is established based on an output signal from the sensors (12, 13) (see paragraphs 0005 to 0012; and Figure 1). With respect to claim 25, JP ‘681’s solar cell array (11) reads on the instant solar cell array and is comprised of a plurality of solar cell modules (203 or 302) as seen in Figure 2. It is the Examiner’s position that the term “solar cell module” in the instant claims encompasses an encapsulated solar cell (203 or 302) of JP ‘681. Short circuit between the output terminals is established when the output signal of the light detection sensor (13) is not more than a value (see paragraphs 0010 to 0016). JP ‘681 teaches the limitations of the instant claims, other than the difference which is discussed below.

JP ‘681 does not specifically teach that its sensors (12, 13) are located “around” the solar cell array (11). However, in the absence of anything unexpected, it would have been a matter of design choice so as to position JP ‘681’s sensors (12, 13) around the solar cell array (11). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have positioned the sensors (12, 13) in practically

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any position relatively near the solar cell array (11), such as "around" the solar cell array (11), with the expectation that JP '681's system would function properly.

7. Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '681 as applied to claims 25, 26, and 29 above, and further in view of Zuzuly (U.S. Patent 6,141,198).

JP '681, as relied upon for the reasons recited above, teaches the limitations of instant claims 27 and 28, the difference being that JP '681 does not specifically teach that an alarm is issued before the short circuit between the output terminals is established. However, as shown by Zuzuly, it is conventional in the electrical art to issue a warning signal before, for example, actuation of a switch, so as to notify users of a problem and allow for corrective action before shutdown (see abstract; col. 1, lines 54-62; and col. 2, lines 12-16). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided JP '681's system with an alarm that is issued before the short circuit between the output terminals is established because it is conventional in the electrical art to issue a warning signal before, for example, actuation of a switch, so as to notify users of a problem and allow for corrective action before shutdown, as shown by Zuzuly.

8. Claims 30, 31, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '681 as applied to claims 25, 26, and 29 above, and further in view of Takehara et al (U.S. Patent 5,669,987).

JP '681, as relied upon for the reasons recited above, teaches the limitations of claims 30, 31, and 34, the difference being that JP '681 does not specifically teach

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the use of plural of its solar cell arrays (11), wherein each array (11) has respective sensors (12, 13). Takehara et al shows the conventionality of using plural solar cell arrays (12, 12, 13, 14) with each array having a respective detection unit (41, 42, 43, 44) (see Figure 1; and col. 3, line 56 through col. 5, line 48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have prepared JP '681's system such that there are plural of JP '681's solar cell arrays (11), wherein each array (11) has a respective set of sensors (12, 13), because it is conventional in the art to prepare a system having using plural solar cell arrays with each array having a respective sensor, as shown by Takehara et al.

9. Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '681 in view of Takehara et al as applied to claims 30, 31, and 34 above, and further in view of Zuzuly (U.S. Patent 6,141,198).

JP '681 in view of Takehara et al, as relied upon for the reasons recited above, teaches the limitations of instant claims 32 and 33, the difference being that JP '681 does not specifically teach that an alarm is issued before the short circuit between the output terminals is established. However, as shown by Zuzuly, it is conventional in the electrical art to issue a warning signal before, for example, actuation of a switch, so as to notify users of a problem and allow for corrective action before shutdown (see abstract; col. 1, lines 54-62; and col. 2, lines 12-16). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided JP '681's system with an alarm that is issued before the short circuit between the output terminals is established because it is conventional in the electrical art to issue a warning signal

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before, for example, actuation of a switch, so as to notify users of a problem and allow for corrective action before shutdown, as shown by Zuzuly.

10. — Claims 25, 26, 29-31, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 7-177652 (herein referred to as JP '652).

JP '652 teaches a method of controlling a photovoltaic power generation system comprising plural connected solar cell arrays (1a, 1b, ...), and a switch (2) for establishing a short circuit between output terminals of the solar cell arrays, wherein the short circuit between the output terminals is established based on an output signal from sensor (7) (see paragraphs 0010, 0011, 0021-0038; and Figure 1 and 2). JP '652 teaches the limitations of the instant claims, other than the difference which is discussed below.

JP '652 does not specifically teach that its sensor (7) is located "around" said solar cell arrays (1a, 1b, ...). However, in the absence of anything unexpected, it would have been a matter of design choice so as to position JP '652's sensor around the solar cell arrays. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have positioned JP '652's sensor in practically any position relatively near the solar cell arrays, such as "around" the solar cell arrays, with the expectation that JP '652's system would function properly.

11. Claims 27, 28, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '652 as applied to claims 25, 26, 29-31, and 34 above, and further in view of Zuzuly (U.S. Patent 6,141,198).



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JP '652, as relied upon for the reasons recited above, teaches the limitations of instant claims 27, 28, 32, and 33 the difference being that JP '652 does not specifically teach that an alarm is issued before the short circuit between the output terminals is established. However, as shown by Zuzuly, it is conventional in the electrical art to issue a warning signal before, for example, actuation of a switch, so as to notify users of a problem and allow for corrective action before shutdown (see abstract; col. 1, lines 54-62; and col. 2, lines 12-16). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided JP '652's system with an alarm that is issued before the short circuit between the output terminals is established because it is conventional in the electrical art to issue a warning signal before, for example, actuation of a switch, so as to notify users of a problem and allow for corrective action before shutdown, as shown by Zuzuly.

12. Claims 25, 26, 29-31, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takehara et al (U.S. Patent 5,669,987) in view of JP 7-177652 (herein referred to as JP '652).

Takehara et al teaches a method of controlling a photovoltaic power generation system comprising plural connected solar cell strings (11, 12, 13, 14), and electrical parameter detection units (41 to 44), i.e., instant sensors (see Figure 1 and 9; and col. 9, lines 26-40). Takehara et al teaches that if an abnormality is found among the strings, a control unit (82) shuts off the power conversion unit (21 to 24) for the respective string so that only an abnormal string can be disconnected from the power

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generating system (see col. 9, lines 26-40; and Figure 9). Takehara et al teaches the limitations of the instant claims, other than the differences which are discussed below.

While Takehara et al does teach disconnecting an abnormal solar cell string from its power generating system, it does not specifically teach disconnecting by establishing a short circuit between the output terminals of the abnormal solar cell string. JP '652 shows the conventionality of using a switch (2) for establishing a short circuit between output terminals of respective solar cell arrays (1a, 1b, ...) (see paragraphs 0010, 0011, 0021-0038; and Figure 1 and 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a switch for establishing a short circuit between output terminals of a respective abnormal solar cell string in Takehara et al's system because it is conventional to use a switch for establishing a short circuit between output terminals of a respective solar cell array, as shown by JP '652.

Takehara et al does not specifically teach that its detection units are located "around" said solar cell strings (12 to 14). However, in the absence of anything unexpected, it would have been a matter of design choice so as to position Takehara et al's detection units around the solar cell strings. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have positioned Takehara et al's detection units in practically any position relatively near the solar cell strings, such as "around" the solar cell arrays, with the expectation that Takehara et al's system would function properly.

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13. Claims 27, 28, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takehara et al in view of JP '652 as applied to claims 25, 26, 29-31, and 34 above, and further in view of Zuzuly (U.S. Patent 6,141,198).

Takehara et al in view of JP '652 is relied upon for the reasons recited above. Takehara et al does teach an alarm, i.e., warning unit (6) (col. 5, lines 49-65), but, with respect to claims 27, 28, 32, and 33, does not specifically teach that a warning (alarm) is issued before the short circuit between output terminals is established. However, as shown by Zuzuly, it is conventional in the electrical art to issue a warning signal before, for example, actuation of a switch, so as to notify users of a problem and allow for corrective action before shutdown (see abstract; col. 1, lines 54-62; and col. 2, lines 12-16). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided Takehara et al's in view of JP '652's system such that Takehara et al's warning unit issues a warning before the short circuit between the output terminals is established because it is conventional in the electrical art to issue a warning signal before, for example, actuation of a switch, so as to notify users of a problem and allow for corrective action before shutdown, as shown by Zuzuly.

### ***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,593,520, US 6,653,549, US 6,858,791, JP 62-154120, and JP 8-84443 are hereby made of record.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Diamond whose telephone number is 571-272-

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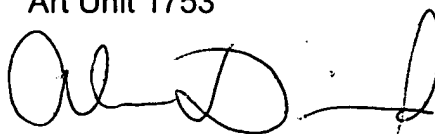
1338. The examiner can normally be reached on Monday through Friday, 5:30 a.m. to 2:00 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alan Diamond  
November 2, 2005

Alan Diamond  
Primary Examiner  
Art Unit 1753

A handwritten signature in black ink, appearing to read 'Alan Diamond', with a stylized flourish at the end.